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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,115	09/24/2003	Louis M. Arquie	SAN449	7256

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EXAMINER	
TRAN, TUYETLIEN T	
ART UNIT	**PAPER NUMBER**
2179	

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,115	ARQUIE ET AL.	
	Examiner	Art Unit	
	Tuyetlien T. Tran	2179	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 8-22* is/are rejected.

7)☒ Claim(s) *5-7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claim 18, a "user interface" is being recited; however, as disclosed by the specification, a system is taught to be software, per se. A program with no structural and functional interrelationship between computer elements is computer software by itself.

Claims 19-22 are rejected as incorporating the deficiencies of a claim upon which it depends.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 8, 10-14, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Germain et al. (Pub No. US 2005/0039132 A1, hereinafter Germain).

As to claim 1, Germain teaches:

A computer-based method for displaying storage network monitoring information (method for visually representing performance and flow analysis of a network, see [0006] lines 1-4), comprising:

identifying a topology map for a storage network (see [0062] lines 4-7 or step 60 Fig. 17);

receiving operating information for the storage network (e.g., colleting local metrics or traffic simulation, see [0030] lines 10-14);

processing the operating information to determine a performance parameter (e.g., processing collected data to analyze the performance, see [0034] lines 1-2); and

for a user interface, generating a performance monitoring display (e.g., visualization software operating in the network management system 20, see [0026] lines 1-3) including at least a portion of the topology map (e.g., topology of a network 100 is illustrated in Fig. 4) and a graphical representation of the performance parameter (e.g., the size and color of the link depend on the utilization rate, see [0036] lines 11-17 and [0037] lines 25-29).

As to claim 10, Germain teaches (18-22)

A method of generating a network monitoring display (method for visually representing performance and flow analysis of a network, see [0006] lines 1-4), comprising:

discovering a topology of a data storage network including data connections between components of the network (see [0062] lines 4-7 or step 60 Fig. 17);

collecting a set of data flow information for the data connections (e.g., colleting local metrics or traffic simulation, see [0030] lines 10-14); and

generating a performance monitoring display (e.g., visualization software operating in the network management system 20, see [0026] lines 1-3) including a graphical representation of the topology with the data connections being represented with a pair of lines (e.g., topology of a network 100 is illustrated in Fig. 4) comprising line segments (e.g., line segments connect node 107 and 102, see Fig. 4) with the lines representing active transmit and receive channels of the data connections based on the data flow information (see Fig. 5; e.g., line segments between node 107 to 102 and from node 102 to node 109), wherein the generating includes displaying the line segments with motion to cause the line segments to appear to move in directions of data flow in the channels represented by each of the lines (e.g., bidirectional arrows to show flows going into or out of a device, see [0037] lines 13-14 and [0041] lines 10-13).

As to claim 2, Germain teaches wherein the performance parameter representation is positioned in the display relative to corresponding portions of the topology map (e.g., device-related performance parameters are mapped over the graph nodes while interface-related metrics are mapped over edges, see [0035] lines 5-10 or Fig. 5).

As to claim 3, Germain teaches wherein the performance parameter is based on data traffic in a data connection of the storage network (see [0028] lines 1-6) and wherein the performance parameter representation is displayed to indicate motion, the

motion having a direction corresponding to the data traffic in the data connection (e.g., bidirectional arrows to show flows going into or out of a device, see [0037] lines 13-14 and [0041] lines 10-13).

As to claim 4, Germain teaches wherein the performance parameter representation is displayed to move (e.g., dynamic visual representation, see [0037] lines 1-2) at a speed that is selected to indicate ranges of values for the performance parameter (see [0043] lines 1-3).

As to claim 8, Germain teaches wherein the graphical representation includes coloring indicative of the value of the performance parameter (e.g., the color of the link is used to indicate utilization rate, see [0037] lines 25-26).

As to claim 11, Germain teaches wherein the motion (e.g., dynamic visual representation, see [0037] lines 1-2) is provided at speeds selected for each of the lines based on a performance parameter determined based on the corresponding portion of the data flow information (e.g., bidirectional arrows have a different sizes corresponding to utilization rate, see [0037] lines 14-21).

As to claim 12, Germain teaches wherein the performance parameter is utilization (e.g., see [0041] line 8) determined by comparing a measured data throughput channels of a data connection with a data rate capacity of the channels of the data connection (e.g., there is a large flow of information going from PC 107 through the swith 102 and then to the PC 108, see Fig. 5) and wherein the speed selected for

each of the lines represents the determined utilization of the corresponding channel (see [0041]).

As to claim 13, Germain teaches wherein the generating includes displaying the lines in a color selected from a set of colors, the colors in the set each corresponding to a different range of values (e.g., "in range", see [0043]) of a performance parameter for the data connections determinable from the collected data flow information (e.g., see [0037] lines 25-30).

As to claim 14, Germain teaches wherein the colors in the lines of at least some of the pairs of lines differ indicating varying performance parameter values in the transmit and receive channels of the data connections (e.g., the color of the link depends on the utilization rate, see [0037] lines 25-30).

As to claim 17, Germain teaches further including receiving a traffic contribution display request (see [0028] lines 1-3) and wherein the generating includes determining from the data flow information ones of the data connections contributing data traffic to a component specified in the request (e.g., gathering information from the communication network, see [0026] lines 5-7), wherein the generated performance monitoring display indicates graphically the contributing ones of the data connections (e.g., nodes 107, 102, 109 and data flows between these nodes, see Fig. 5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Germain in view Nelles et al. (Pub No. US 2006/0129939 A1, hereinafter Nelles).

As to claim 9, Germain teaches the limitation of claim 8 for the reasons as discussed with respect to claim 8 above. Germain further teaches wherein the performance parameter is utilization of a data throughput capacity of a data connection (see Fig. 11 and [0032]) and wherein the graphical representation includes a double line (e.g., double lines connected nodes 107 and 102 together, see Fig. 4). Germain fails to teach that the lines being solid when there is no utilization and including line segments when there is a level of utilization, the length of the line segments decreasing with increasing utilization and the coloring indicating the level of utilization based on a color coding scheme.

Nelles teaches the lines being solid when there is no utilization (e.g., double solid lines connecting the nodes together, see Fig. 1a) and includes line segments when there is a level of utilization (e.g., the dash line connecting the nodes together, see Fig. 1a), the length of the line segments decreasing with increasing utilization and the coloring indicating the level of utilization based on a color coding scheme (e.g., different dash lines are used to display different path of channel, see Fig. 4a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of using solid line and dash line to represent different paths of channel by Nelles to the method for visually representing performance and flow analysis of a network as taught by Germain to help a network administrator differentiate between idle state of busy state to achieve a more efficient monitoring of the network topology (see Nelles [0051]).

As to claim 15, Germain teaches the limitation of claim 13 for the reasons as discussed with respect to claim 13 above. Germain fails to teach that the method further includes receiving a user selection of one of the range of values and displaying only the user selected lines having the selected range of value.

Nelles teaches further including receiving a user selection of one of the range of values and wherein the generated performance monitoring display includes only the lines having values for the performance parameter in the selected range of values (e.g., customized selection of attribute from a menu, see [0016] and Fig. 3a, 3b).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the step of having a user selection of one of the attribute from the menu as taught by Nelles to the method for visually representing performance and flow analysis of a network as taught by Germain to achieve a more efficient monitoring of the network topology (see Nelles [0051]).

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Germain in view Byrnes (Pub No. US 2002/0095493 A1, hereinafter Byrnes).

As to claim 16, Germain teaches the limitation of claim 10 for the reasons as discussed with respect to claim 10 above. Germain fails to teach that the method includes creating a legend defining the graphical representation relative to parameters calculated based on the collected data flow information.

Byrnes teaches wherein the generating includes creating a legend defining the graphical representation relative to parameters calculated based on the collected data flow information (see Fig. 5), the legend including lines with segments having lengths equal to the line segments in the lines in the display and wherein the legend lines are displayed to have motion corresponding to the motion of the line segments in the display lines (e.g., the legend includes all the graphical representation shown in the display, see Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the feature of display legend defining graphical representation relative to what shown in the display as taught by Byrnes to the method for visually representing performance and flow analysis of a network as taught by Germain to provide network administrators the definitions of graphical representation used in the display and to help them find solutions to avoid network congestion (see Byrnes Fig. 5 and [0010] lines 1-5).

7. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Germain in view Nelles further in view of Byrnes.

As to claim 18, Germain teaches A user interface for a computer monitor (network management system 20, see [0026] lines 1-3), comprising:

a map of a data storage network with icons representing physical components of the network (e.g., topology of network 100, see Fig. 4);

pairs of lines between the components (lines segment connecting node 107 and node 102, see Fig. 4) representing transmit and receive channels used by connected ones of the components for transferring digital data (e.g., in and out channel, see Fig. 11).

Germain fails to teach that at least some of the lines comprise line segments separated by gaps with the line segments displayed moving. Nelles teaches wherein at least some of the lines comprise line segments separated by gaps (dash lines, see Fig. 4a) with the line segments displayed moving (e.g., arrow, see Fig 4a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of using different line patterns to represent different paths of channel by Nelles to the method for visually representing performance and flow analysis of a network as taught by Germain to help a network administrator differentiate between states of a network to achieve a more efficient monitoring of the network topology (see Nelles [0051]).

Germain and Nelles fail to teach including a legend in the user interface.

Byrnes teaches a user interface with a legend including legend lines displayed similarly to the pairs of lines and line definitions proximal to the legend lines indicating a range of performance values corresponding to the legend lines and matching lines (e.g., the legend includes all the graphical representation shown in the display, see Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the feature of display legend defining graphical representation relative to what shown in the display as taught by Byrnes to the method for visually representing performance and flow analysis of a network as taught by Germain in view of Nelles to provide network administrators the definitions of graphical representation used in the display and to help them find solutions to avoid network congestion (see Byrnes Fig. 5 and [0010] lines 1-5).

As to claim 19, Germain and Nelles and Byrnes teach the limitation of claim 18 for the reasons as discussed with respect to claim 18 above. Nelles further teaches wherein the line segments in the pairs of lines have a length inversely proportional to a magnitude of the performance value represented by the lines (it should be noted that the darker the pattern is the higher magnitude of the performance value is, see Fig. 5).

Therefore, combining Germain, Nelles, and Byrnes would meet the claimed limitation for the same reason as discussed in claim 9.

As to claim 20, Germain teaches wherein the lines and legend lines are colored one of a set of colors arbitrarily associated to a magnitude of the performance value represented by the line (e.g., the color of the link is used to indicate utilization rate, see [0037] lines 25-26).

As to claim 21, Germain teaches wherein the line segments are moved (e.g., dynamic visual representation, see [0037] lines 1-2) at a speed selected from a group of

speeds corresponding to a magnitude of the performance value represented by the line (see [0043] lines 1-3).

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Germain in view Nelles further in view of Byrnes further in view of Olson (Patent No. 6,381,036 B1, hereinafter Olson).

As to claim 22, Germain, Nelles and Byrnes teach the limitation of claim 18 for the reasons as discussed with respect to claim 18 above. Germain, Nelles, and Byrnes fail to teach that the legend includes buttons corresponding to the legend lines, the buttons being selectable to cause a subset of the plurality of lines to be displayed comprising the matching lines.

Olson teaches wherein the legend includes buttons (e.g., slider, see Fig. 2 item 44) corresponding to the legend lines (e.g., 400 corresponding to 'Black Boost', see Fig. 2 item 44), the buttons being selectable to cause a subset of the plurality of lines to be displayed comprising the matching lines (it should be noted that the slider is controllable to select a desired colorant level, see Fig. 2 item 44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used dynamic legend as taught by Olson to the method for visually representing performance and flow analysis of a network as taught by Germain in view of Nelles further in view of Byrnes to determine the match pattern for the graphical representation shown on the display (see Olson Col. 1, lines 31-35).

Allowable Subject Matter

9. Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Publication No. US 2003/0225876 A1 is cited to teach a method for network management and for graphically displaying performance information about network.

Patent No. 7,013,433 B1 is cited to teach a method for generating a dynamic legend for a drawing developed by a diagramming software program.

Patent No. US 6,721,290 B1 is cited to teach a method for multicasting real time traffic in wireless AD-HOC networks.

Publication No. US 2002/0024535 A1 is cited to teach a network management equipment and communication path setting method.

Publication No. US 2003/0105973 A1 is cited to teach a method of providing an early warning monitors in a network environment.

Publication No. US 2004/0155900 A1 is cited to teach a method for providing a graphical user interface to, for building, and/or for monitoring a telecommunication network.

Publication No. US 2004/0249935 A1 is cited to teach a method for providing real-time monitoring of components of a data network to a plurality of users.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyetlien T. Tran whose telephone number is 571-270-1033. The examiner can normally be reached on Mon-Friday: 7:30 - 5:00 (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh D. Nguyen can be reached on 571-272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

L.T
8/7/06

Lien Tran
Examiner
Art Unit 2179

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